REMARKS

This application has been carefully reviewed in light of the Office Action dated November 10, 2005. Claims 19 to 29 remain pending in the application, of which Claims 27 to 29 have been withdrawn by the Examiner from further consideration. Of the claims that have received an action on the merits, Claims 19 and 23 are independent. Reconsideration and further examination are respectfully requested.

The Office Action clarified the election of species requirement from the previous Office Action and Applicants affirm their provisional election to prosecute Species I for which Claims 19 to 26 read thereon. However, Applicants submit that Claims 19 and 23 are generic to each species. In more detail, Applicants submit that the claimed communication means/step, characteristic-information acquisition means/step, and determination means/step of Claims 19 and 23 is generic to the claimed means/step for transmitting test pattern data, reading means/step, and calculating means/step of Claims 27 to 29. Thus, upon allowance of the generic claims, the non-elected claims should be rejoined and an action on the merits therefore should be issued.

In the Office Action, Claims 19 to 26 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,538,762 (Terashima) in view of U.S. Patent No. 5,166,986 (Mizuoka). The rejections are respectfully traversed and the Examiner is requested to reconsider and withdraw the rejections in light of the following comments.

The present invention controls dot connectivity in a binary image to be transmitted to an image recording device. According to the invention, characteristic-information concerning dot reproducibility of an external image recording apparatus, which differs according to the type of image recording device, is acquired from the recording apparatus. Then, based on the acquired characteristic-information, a dot connectivity parameter to be used for binarization of multilevel image data is determined, where the parameter is variably controllable to control dot connectivity in a binary image. The multilevel image data is then binarized using the determined dot connectivity parameter and the binarized image is transmitted to the recording apparatus. Thus, an appropriate

- 8 -

parameter for binarizing the image can be determined depending on the type of recording apparatus since the parameter is acquired from the apparatus.

Referring specifically to the claims, independent claim 19 is an image processing apparatus that transmits, via a network, binary image data to an external image recording device, which records an image based on the binary image data, said apparatus comprising input means for inputting, pixel by pixel, multilevel image data containing gray-scale information, binarization means for binarizing the multilevel image data by using a dot connectivity parameter which is variably controllable to control dot connectivity in a binary image, communication means for communicating with the external image recording device via the network, characteristic-information acquisition means for acquiring, by said communication means, characteristic-information concerning dot reproducibility of the external image recording device, wherein the characteristic-information differs according to a type of the external image recording device, determination means for determining the dot connectivity parameter to be used by the binarization means in accordance with the characteristic-information acquired by said characteristic-information acquisition means, and transmitting means for transmitting image data binarized by said binarization means to the external image recording device, wherein said binarization means binarizes the multilevel image data using the dot connectivity parameter determined by the determination means, and said transmitting means transmits the image data binarized by said binarization means to the external image recording device from which the characteristic-information is acquired.

Independent Claim 23 is the method claim that substantially corresponds to Claim 19.

The applied art is not seen to disclose or suggest the features of the present invention, and in particular, is not seen to disclose or to suggest at least the feature of an image processing apparatus acquiring characteristic-information concerning dot reproducibility from an external image recording device, wherein the characteristic-information differs according to a type of the external recording device, and determining,

- 9 -

based on the acquired characteristic-information of dot reproducibility, a dot connectivity parameter which is variably controllable to control dot connectivity in a binary image so as to binarize multilevel image data using the determined dot connectivity parameter.

Terashima is seen to disclose a printer controller that receives image data and an image conversion parameter from a host computer and outputs image data converted based on the image conversion parameter of the printer. However, Terashima is not seen to disclose or to suggest that the conversion parameter differs according to a type of the printer. Moreover, the Office Action again admits that Terashima fails to disclose the claimed process of determining means/step for determining the dot connectivity parameter based on acquired characteristic-information, where the parameter is variably controllable to control dot connectivity, and binarizing the image using the determined parameter.
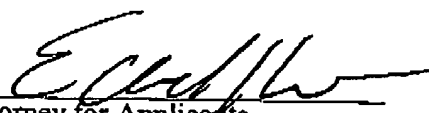
Mizouka is merely seen to disclose a televison camera that judges an optimum connectively based on a histogram in order to binarize an image. Thus, Mizouka merely judges the most suitable binary level based on connectivity distributions of binarized signals. However, Mizouka is not seen to add anything that, when combined with Terashima, would have resulted in the present invention. Specifically, Mizouka is not seen to disclose or to suggest at least the feature of an image processing apparatus acquiring characteristic-information concerning dot reproducibility from an external image recording device, wherein the characteristic-information differs according to a type of the external recording device, and determining, based on the acquired characteristic-information of dot reproducibility, a dot connectivity parameter which is variably controllable to control dot connectivity in a binary image so as to binarize multilevel image data using the determined dot connectivity parameter.

In view of the foregoing amendments and remarks, independent Claims 19 and 23, as well as the claims depending therefrom, are believed to be allowable.

No other matters having been raised, the entire application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney may be reached in our Costa Mesa, California office by telephone at (714) 540-8700. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

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- 11 -